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EXAMINER	
BEYEN, ZEWDU A	

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2461	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/571,189	FARRELL ET AL.	
	Examiner	Art Unit	
	ZEWDU BEYEN	2461	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 November 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42 and 46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-42 and 46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/08/2010*.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filled 11/08/2010 has been entered. No claims have been canceled. As such, claims 1-42 and 46 currently are pending.

Information Disclosure Statement

2. An initialed and dated copy of applicant's IDS form 1449 submitted 11/08/2010, is attached to the instant office action.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in Graham **v.** John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1, 2, 24, 27-28, 33-35, 40, 42, and 46 are rejected under 35 U.S.C. 103(a) over El-Malki et al. to (**US6947401**) and in view Rueda to (US-PGPUB**20020112076**)

Regarding claims 1, 42, and 46, El-Malki teaches the steps of (a) using a source packet interceptor to intercept an IP packet from a source application , (b) using a source edge process to act as the new destination for the source application , (c) using a source packet driver to aggregate the intercepted IP packets, (d) using a source data mover to transport the aggregated IP packets over a communication link to a destination data mover , (e) using a destination packet driver to disaggregate the transported aggregated packets , (f) using a destination edge process to deliver the disaggregated IP packets to a destination application **(Col.2 lines 3-19 discloses After the mobile node registers its new care-of address with home agent 145, the home agent is able to serve as a proxy for mobile node 105. Accordingly, IP data packets from correspondent node 155 which are addressed to the mobile node 105 (i.e., the mobile terminal's home address) will be intercepted by the home agent 145. The home agent 145 then encapsulates the IP data packet so that the destination address reflects the mobile terminal's care-of-address, i.e., the address of foreign agent 120. The data packet is then sent from the home agent 145 to the foreign agent 120. When the IP data packet arrives at foreign agent 120, the IP data packet is retransformed or de-capsulated by stripping away the external IP header so that the mobile node's home address once again appears as the destination address. The IP data packet can then be delivered to the mobile node, wherein the data contained therein can be processed by the appropriate higher level protocols (e.g., TCP or UDP))**

El-Malki does not explicitly teaches the source packet interceptor examines an IP header of the IP packet to determine if it is an IP packet to be intercepted

However, Rueda teaches the source packet interceptor examines an IP header of the IP packet to determine if it is an IP packet to be intercepted(**[0140] discloses TCP/IP protocol stack at the System server will send a packet to the System NDIS Intermediate Driver with an Ethernet address equal to client (B)'s MAC address (00:55:44:33:22:11) since the ARP table happens to have client (B)'s entry listed first. However, once the System NDIS Intermediate Driver intercepts the packet from the transport driver it does a lookup in DestAddrPool using the destination IP address and destination TCP/UDP port number of the received packet to determine if the source IP address of the packet needs to be changed)**

Therefore it would have been obvious to one ordinarily skilled in the art at the time the invention was made to enable the system of El-Malki include a look-up table to examines an IP header of the IP packet to determine if it is an IP packet to be intercepted, as suggested by Rueda. This modification would benefit the system to efficiently process the needed packets.

Regarding claim 2, the combination of El-Malki and Rueda teaches the transport protocol optimization method of claim 1, comprising the step of using IP routing **(Rueda , [0140] discloses transmitting IP packet).**

Regarding claim 24, the combination of El-Malki and Rueda teaches the transport protocol optimization method of claim 1 wherein packets are intercepted by an operating system exit point (El-Malki , **Col.2 lines 5-9 discloses IP data packets from**

correspondent node 155 which are addressed to the mobile node 105 (i.e., the mobile terminal's home address) will be intercepted by the home agent 145)

Regarding claim 27, the combination of El-Malki and Rueda teaches the transport protocol optimization method of claim 1, comprising the step of terminating any connection between a source application and a destination application (El-Malki , **Col.2 lines 15-19 When the IP data packet arrives at foreign agent 120, the IP data packet is retransformed or de-capsulated by stripping away the external IP header so that the mobile node's home address once again appears as the destination address. The IP data packet can then be delivered to the mobile node**).

Regarding claim 28, the combination of El-Malki and Rueda teaches the transport protocol optimization method of claim 1, comprising the step of opening a connection between a source data mover and a destination data mover (El-Malki , **Col.2 lines 15-19 When the IP data packet arrives at foreign agent 120, the IP data packet is retransformed or de-capsulated by stripping away the external IP header so that the mobile node's home address once again appears as the destination address. The IP data packet can then be delivered to the mobile node**).

Regarding claim 33, the combination of El-Malki and Rueda teaches optimization is comprised of the step of optimization using transport protocol optimization source software and destination software (Rueda **,[0022] discloses The InterProxy product is functionally closer to the System than IPORT. The key differences between the System and InterProxy is that the System is a software solution and is not hardware-specific like InterProxy).**

Regarding claim 34, the combination of El-Malki and Rueda teaches the source software optionally runs on a source server, a source network switch, or as a source network appliance and the destination software optionally runs on a destination server, a destination network switch, or as a destination network appliance (Rueda **,[0022] discloses The InterProxy product is functionally closer to the System than IPORT. The key differences between the System and InterProxy is that the System is a software solution and is not hardware-specific like InterProxy).**

Regarding claim 35, the combination of El-Malki and Rueda teaches connecting the source and destination network appliances to a(a) network switch, which switch is connected to an application server running a application; (b)network switch, which switch is connected to an application server running a application and to anetwork router; or (c) to an application server running a application (Rueda **,fig.16 discloses server, gateway and router**).

Regarding claim 3, the combination of El-Malki and Rueda teaches IP packet comprising is optionally a TCP, UDP, ICMP, or other type of IP packet (Rueda **,[0140] discloses TCP/IP protocol stack**)

Regarding claim 6, the combination of El-Malki and Rueda teaches the step of intercepting an IP packet from the source application comprises the step of routing the IP packet to an edge process that is exclusive unique to the address of the IP packet(Rueda **,[**

0140] discloses TCP/IP protocol stack at the System server will send a packet to the System NDIS Intermediate Driver with an Ethernet address equal to client (B)'s MAC address (00:55:44:33:22:11) since the ARP table happens to have client (B)'s entry listed first. However, once the System NDIS Intermediate Driver intercepts the packet from the transport driver it does a lookup in DestAddrPool using the destination IP address and destination TCP/UDP port number of the received packet to determine if the source IP address of the packet needs to be changed).

Regarding claim 16, the combination of El-Malki and Rueda teaches the step of combining a routing header field, a message header field, and the intercepted IP packet data from

the edge process(Rueda **, [00140] discloses TCP/IP protocol stack it is well known as disclosed per RFC-793, fig.3 , the header field and the data are combined**).

Regarding claim 26, the combination of El-Malki and Rueda teaches The transport protocol optimization method of claim 6, comprising the step of creating a edge process for each TCP application connection; (Rueda **,[0140] discloses TCP/IP protocol stack at the System server will send a packet to the System NDIS Intermediate Driver with an Ethernet address equal to client (B)'s MAC address (00:55:44:33:22:11) since the ARP table happens to have client (B)'s entry listed first. However, once the System NDIS Intermediate Driver intercepts the packet from the transport driver it does a lookup in DestAddrPool using the destination IP address and destination TCP/UDP port number of the received packet to determine if the source IP address**

of the packet needs to be changed) a UDP edge process for each UDP intercept(Rueda , **[0082] FIG. 12 discloses the System For each packet that arrives to the driver, creates a UDP packet with destination information and send to transport layer on the System port (60). Add client information to DestAddrPool if UDP packet or if a handshaking TCP packet)**; and a ICMP edge process for a ICMP intercept

Regarding claim 40, the combination of El-Malki and Rueda teaches the transport protocol optimization method of claim 1, comprising the steps of (a) attaching a source server running the source application on a source LAN, (b) attaching a source TPO on the source LAN and, (c) attaching a destination server running a destination application on a destination LAN, and (d) attaching a destination TPO on the destination LAN(El-Malki ,**Col.2 lines 3-19 discloses After the mobile node registers its new care-of address with home agent 145, the home agent is able to serve as a proxy for mobile node 105. Accordingly, IP data packets from correspondent node 155 which are addressed to the mobile node 105 (i.e., the mobile terminal's home address) will be intercepted by the home agent 145. The home agent 145 then encapsulates the IP data packet so that the destination address reflects the mobile terminal's care-of-address, i.e., the address of foreign agent 120. The data packet is then sent from the home agent 145 to the foreign agent 120. When the IP data packet arrives at foreign agent 120, the IP data packet is retransformed or de-capsulated by stripping away the external IP header so that the mobile node's home address once again appears as the destination address. The IP data packet can then be delivered to the mobile node, wherein the data contained therein can be processed by the appropriate higher level protocols (e.g., TCP or UDP))**

5. Claims 29,31,32,36,37, and 41 are rejected under 35 U.S.C. 103(a) over El-Malki et al. to (US6947401) **and in view** Rueda **to (US-PGPUB20020112076), and further in view of Ando to (US-PGPUB-2002/0044556)**

Regarding claim 29, the combination of El-Malki and Rueda does not explicitly teach the steps of (a) opening a connection between the source application and the source edge processor and (b) opening a connection between the destination edge processor and the destination

However, Ando teaches the transport protocol optimization method of claim 28, comprising the steps of (a) opening a connection between the source application and the source edge processor and (b) opening a connection between the destination edge processor and the destination application**(fig.3 discloses the multiplexer is connecter with the destination application)** .

Therefore it would have been obvious to one ordinarily skilled in the art at the time the invention was made to enable the system of the combination of El-Malki and Rueda include steps of (a) opening a connection between the source application and the source edge processor and (b) opening a connection between the destination edge processor and the destination application, as suggested by Ando. This modification would benefit the system to efficiently process the needed packets.

Regarding claim 32, the combination of El-Malki and Rueda does not explicitly teach wherein the decompression engine performs the step of decompressing the aggregated packet driver messages

However, Ando teaches the transport protocol optimization method of claim 17, wherein the decompression engine performs the step of decompressing the aggregated packet driver messages **(fig 3 discloses a multiplexer).**

Therefore it would have been obvious to one ordinarily skilled in the art at the time the invention was made to enable the system of the combination of El-Malki and Rueda include wherein the decompression engine performs the step of decompressing the aggregated packet driver messages,as suggested by Ando. This modification would benefit the system to efficiently process the needed packets.

Regarding claim 36, the combination of El-Malki and Rueda does not explicitly teach the step of integrating the source packet interceptor, driver, end processors, compression engine, and data mover into a source TPO

However,Ando teaches the transport protocol optimization method of claim 1, comprising the step of integrating the source packet interceptor, driver, end processors, compression engine, and data mover into a source TPO **(in fig 3, the multiplexers and the wire encompass the purpose of interceptor, driver, end processors, compression engine, and data mover).**

Therefore it would have been obvious to one ordinarily skilled in the art at the time the invention was made to enable the system of the combination of El-Malki and Rueda include the step of integrating the source packet interceptor, driver, end processors, compression engine, and data mover into a source TPO, as suggested by Ando. This modification would benefit the system to efficiently process the needed packets.

Regarding claim 37, the combination of El-Malki and Rueda does not explicitly teach the step of integrating the packet interceptor, driver, end processors, compression engine, and data mover into a destination TPO

However, Ando teaches the transport protocol optimization method of claim 1, comprising the step of integrating the packet interceptor, driver, end processors, compression engine, and data mover into a destination TPO **(in fig.3, the multiplexers and the wire encompass the purpose of interceptor, driver, end processors, compression engine, and data mover).**

Therefore it would have been obvious to one ordinarily skilled in the art at the time the invention was made to enable the system of the combination of El-Malki and Rueda include the step of integrating the packet interceptor, driver, end processors, compression engine, and data mover into a destination TPO, as suggested by Ando. This modification would benefit the system to efficiently process the needed packets.

Regarding claim 31, the combination of El-Malki and Rueda does not explicitly teach steps of (a) transporting packets from the source application to the source packet interceptor over a source LAN and (b) transporting packets delivered to a destination data mover to a destination application over a destination LAN

However, Ando teaches the transport protocol optimization method of claim 29, comprising the steps of (a) transporting packets from the source application to the source packet interceptor over a source LAN and (b) transporting packets delivered to a destination data mover to a destination application over a destination LAN (**fig.3 discloses the source application to the source packet interceptor over a source over an IP network to a destination data mover to a destination application over a destination**).

Therefore it would have been obvious to one ordinarily skilled in the art at the time the invention was made to enable the system of the combination of El-Malki and Rueda include the steps of (a) transporting packets from the source application to the source packet interceptor over a source LAN and (b) transporting packets delivered to a destination data mover to a destination application over a destination LAN, as suggested by Ando. This modification would benefit the system to efficiently process the needed packets.

Regarding claim 41, the combination of El-Malki and Rueda does not explicitly teach wherein the packets from the source application are transported over the source LAN to the source TPO and the packets from the destination application are transported over the destination LAN to the destination TPO

However, Ando teaches The transport protocol optimization method of claim 40, wherein the packets from the source application are transported over the source LAN to the source TPO and the packets from the destination application are transported over the destination LAN to the destination TPO **(fig.3 discloses the source application to the source packet interceptor over a source over an IP network to a destination data mover to a destination application over a destination).**

Therefore it would have been obvious to one ordinarily skilled in the art at the time the invention was made to enable the system of the combination of El-Malki and Rueda include wherein the packets from the source application are transported over the source LAN to the source TPO and the packets from the destination application are transported over the destination LAN to the destination TPO, as suggested by Ando. This modification would benefit the system to efficiently process the needed packets.

6. Claims 4, 5 and 25 are rejected under 35 U.S.C. 103(a) over El-Malki **and** Rueda , and **in further view Yan to (US2005/0018651)**

Regarding claim 4, the combination of El-Malki and Rueda does not explicitly teach the transport protocol optimization method of claim 1, wherein intercepting an IP packet from the source application comprises the steps of comparing the IP packet's address to packet addresses in a look-up table and (b) intercepting only those source packets with the same addresses as those stored in the look-up table.

However, Yan discloses the steps of comparing the IP packet's address to packet addresses in a look-up table and (b) intercepting only those source packets with the same addresses as those stored in the look-up table(a discrimination table, figure 5, box 106).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of the combination of El-Malki and Rueda by including the steps of comparing the IP packet's address to packet addresses in a look-up table and (b) intercepting only those source packets with the same addresses as those stored in the look-up table, as suggested by Yan. This modification would benefit the system to processes packets selectively.

Regarding claim 25, the combination of the combination of El-Malki and Rueda andYan, discloses the transport protocol optimization method of claim 4 comprising the step of modifying the destination address of the IP packets accepted for interception to be the address of the source packet interceptor (**Yan, fig. 3a box 196, translate the source IP address**).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of the combination of El-Malki and Rueda by modifying the destination address of the IP packets accepted for interception to be the address of the source packet interceptor, as suggested by Yan. This modification would benefit the system by increasing packet delivery reliability (Yan, col.3 lns 40-44).

Regarding claim 5, Though the combination of El-Malki and Rueda does not explicitly discloses the transport protocol optimization method of claim 1, wherein the address of the IP packet comprises the packet's source IP address, source port number, destination IP address, destination port number, and protocol type, it is obvious to one of ordinary skill in the art standard IP frame contains the above mentioned fields **(for instance, Yan ,fig 10 discloses outbound client data with source IP address, source port number, destination IP address, destination port number, and protocol type).**

7. Claims 7-15 and 17-22, and 30 are rejected under 35 U.S.C. 103(a) over El-Malki and Rueda to **(US-PGPUB-20020112076)** And further in view of Chapman et al. to **(US6643292)**

Regarding claim 19, El-Malki does not explicitly teach transmission of packet driver buffers over a communication link by the data mover comprises
one or more of the steps of (a) inserting data mover fields into the start of the packet driver buffer; (b) if necessary, reducing the size of the packet driver buffer by breaking

the buffer into multiple segments, with each segment being no greater than the size specified in the configuration file; (c) using standard UDP socket calls to interface with the TCP stack for UDP delivery of the segments over the network

However, Rueda teaches transmission of packet driver buffers over a communication link by the data mover comprisesone or more of the steps of (a) inserting data mover fields into the start of the packet driver buffer; (b) if necessary, reducing the size of the packet driver buffer by breaking the buffer into multiple segments, with each segment being no greater than the size specified in the configuration file; (c) using standard UDP socket calls to interface with the TCP stack for UDP delivery of the segments over the network **([0082] FIG. 12 discloses the System For each packet that arrives to the driver, creates a UDP packet with destination information and send to transport layer on the System port (60). Add client information to DestAddrPool if UDP packet or if a handshaking TCP packet)**

Therefore it would have been obvious to one onrdinarly skilled in the art at the time the invention was made to enable the system of El-Malki include transmission of packet driver buffers over a communication link by the data mover comprises one or more of the steps of (a) inserting data mover fields into the start of the packet driver buffer; (b) if necessary, reducing the size of the packet driver buffer by breaking the buffer into multiple segments, with each segment being no greater than the size specified in the configuration file; (c) using standard UDP socket calls to interface with the TCP

stack for UDP delivery of the segments over the network, as suggested by Rueda. This modification would benefit the system to be more efficient.

Regarding claim 20, El-Malki does not explicitly teach the communication link is a TCP, UDP, or other TCP/IP link However, Rueda teaches the communication link is a TCP, UDP, or other TCP/IP link **([0140] discloses TCP/IP protocol stack)**.

Therefore it would have been obvious to one onrdinarly skilled in the art at the time the invention was made to enable the system of El-Malki include the communication link is a TCP, UDP, or other TCP/IP link, as suggested by Rueda. This modification would benefit the system to be more efficient.

Regarding claim 30, El-Malki does not explicitly teach the TCP, UDP, or other TCP/IP link for transporting the stored packets is over a WAN

However, Rueda teaches the TCP, UDP, or other TCP/IP link for transporting the stored packets is over a WAN(**[0021] DISCLOSES The Interproxy server includes two 10 Mbps or 100 Mbps Ethernet cards and typically sits behind a router connected to the Internet or a WAN connection in a branch office**)

Therefore it would have been obvious to one onrdinarly skilled in the art at the time the invention was made to enable the system of El-Malki include the TCP, UDP, or other TCP/IP link for transporting the stored packets is over a WAN as suggested by Rueda. This modification would benefit the system to be more efficient

Regarding claim 21, El-Malki does not explicitly teach the data mover protocol comprising comprises (a) data mover transport data subfield, and (b) data mover transport acknowledgement subfield

However, Rueda teaches the data mover protocol comprising comprises (a) data mover transport data subfield, and (b) data mover transport acknowledgement subfield(**[00140] discloses TCP/IP protocol stack it is well known as disclosed per RFC-793, fig.3 , that TCP header format includes a data filed and acknowledgment field**).

Therefore it would have been obvious to one onrdinarly skilled in the art at the time the invention was made to enable the system of El-Malki include the data mover protocol comprising comprises (a) data mover transport data subfield, and (b) data mover transport acknowledgement subfield ,as suggested by Rueda. This modification would benefit the system to be more efficient

Regarding claim 22, El-Malki does not explicitly teach the data mover transport data subfield comprising comprises the length of the entire subfieldthe logical sequence number of this transport message, and the physical sequence number of this transport message

However, Rueda teaches the data mover transport data subfield comprising comprises the length of the entire subfield the logical sequence number of this transport message(**[00140] discloses TCP/IP protocol stack it is well known as disclosed per RFC-793, Page 17, that TCP includes length of the header field and data field**), the subfield type code(**[00140] discloses TCP/IP protocol stack it is well known as disclosed per RFC-793 section 2.9 discloses TCP makes use of internet protocol type of service field**),, and the physical sequence number of this transport message(**[00140] discloses TCP/IP protocol stack it is well known as disclosed per RFC-793, fig.3 , TCP HEADER discloses sequence number**)

Therefore it would have been obvious to one ordinarily skilled in the art at the time the invention was made to enable the system of El-Malki include the data mover transport data subfield comprising comprises the length of the entire subfield the logical sequence number of this transport message, and the physical sequence number of this transport message, as suggested by Rueda. This modification would benefit the system to be more efficient

Regarding claim 7, El-Malki silent on the transport protocol optimization method of claim 1, wherein intercepting an IP packet from the source application comprises the steps of an edge process (a) reading the data contained in the routed IP packets and (b) forming a message header field for the routed IP packets.

However, Chapman teaches the transport protocol optimization method of claim 1, wherein intercepting an IP packet from the source application comprises the steps of an edge process (a) reading the data contained in the routed IP packets and (b) forming a message header field for the routed IP packets (Chapman, **col. 3 lns 60-62 discloses encapsulating packets and including TCP header).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of El-Malki by including the steps of an edge process (a) reading the data contained in the routed IP packets and (b) forming a message header field for the routed IP packets, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 15, the combination of El-Malki- Rueda -Chapman teach the transport protocol optimization method of claim 7, wherein the message header comprises a version field, a length of header field, a message function type field, a message flag field, a protocol type field, a sequence number field, a source IP address field, a destination IP address field, a source IP port number field, a destination IP port number field, a length of data field, and a status field(Chapman , **fig.5 and fig.7 (TCP/IP) discloses version field, a length of header field, a message function type field, a message flag field, a protocol type field, a sequence number field, a source IP address field, a destination IP address field, a source IP port number field, a destination IP port number field, a length of data field, and a status field).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of El-Malki - Rueda -Chapman by including wherein the message header comprises a version field, a length of header field, a message function type field, a message flag field, a protocol type field, a sequence number field, a source IP address field, a destination IP address field, a source IP port number field, a destination IP port number field, a length of data field, and a status field, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 8, El-Malki silent on the transport protocol optimization method of claim 1, comprising the step of the packet driver forming a packet driver message.

However, Chapman teaches the transport protocol optimization method of claim 1, comprising the step of the packet driver forming a packet driver message(Chapman **,col. 3 lns 60-62 discloses encapsulating packets and including TCP header (which form TCP/IP packet) before sending to the transport network).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of El-Malki by including the step of the packet driver forming a packet driver message, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 9, the combination of El-Malki -Chapman teach the transport protocol optimization method of claim 8, wherein the packet driver message comprises the message header field and intercepted IP packet data from one edge process (Chapman, **fig.5 and fig.7 discloses packets with header field when combining these two packets it gives the TCP/IP data).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of El-Malki -Chapman by including the packet driver message comprises the message header field and intercepted IP packet data from one edge process, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 10, the combination of El-Malki- Rueda -Chapman teach the transport protocol optimization method of claim 9, comprising the step of forming a plurality of packet driver messages (Chapman , **col. 3 lns 60-62 discloses encapsulating packets and including TCP header (which form TCP/IP packet) before sending to the transport network).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of El-Malki - Rueda -Chapman by including the step of forming a plurality of packet driver messages, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 11, the combination of El-Malki - Rueda -Chapman teach the transport protocol optimization method of claim 10, comprising the step of aggregating multiple packet driver messages into a packet driver buffer (Chapman ,**col.2 lns 61-62 discloses aggregating TCP packets into buffer).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of El-Malki - Rueda -Chapman by including the step of aggregating multiple packet driver messages into a packet driver buffer, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 12 the combination of El-Malki - Rueda -Chapman teach the transport protocol optimization method of claim 11, wherein the size of the aggregated packet driver messages is less than or equal to a predetermined maximum size of the buffer (Chapman , **col.2 lns 62-64, discloses TCP packets are suitable for first-in-first-out queues, so it will maintain the right level at all time**).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of El-Malki - Rueda -Chapman by including the size of the aggregated packet driver messages is less than or equal to a predetermined maximum size of the buffer, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 13, the combination of El-Malki - Rueda -Chapman teach the transport protocol optimization method of claim 12, comprising the step of the packet driver forming a routing header in the packet driver buffer that precedes the first packet driver message (Chapman, **col.5 lns 28-31, discloses Transport Access Point compresses customer packets and add routing header**).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of El-Malki - Rueda -Chapman by

including the step of the packet driver forming a routing header in the packet driver buffer that precedes the first packet driver message, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 14, the combination of El-Malki - Rueda -Chapman teach the transport protocol optimization method of claim 13, wherein the routing header comprises a function type field, a number of packet driver messages field, and a data length field (Chapman , **fig.5 discloses IP header that contains : function type field, a number of packet messages field, and a data length field**).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of El-Malki - Rueda -Chapman by including the routing header comprises a function type field, a number of packet driver messages field, and a data length field, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 17, the combination of El-Malki - Rueda -Chapman teach the transport protocol optimization method of claim 11, comprising the step of using a compression engine to compress the packet driver buffer (Chapman, **col.5 lns 27-29, discloses Transport Access Point compresses customer packets**).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of El-Malki- Rueda -Chapman by including the step of using a compression engine to compress the packet driver buffer, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

Regarding claim 18, the combination of El-Malki -Rueda -Chapman teach the transport protocol optimization method of claim 17, comprising the step of routing the packet driver buffer to the data mover (Chapman, **col.5 lns 27-29 , discloses at the transport access point after aggregating customers packets pass it to the router).**

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of El-Malki Rueda -Chapman by including the step of routing the packet driver buffer to the data mover, as suggested by Chapman. This modification would benefit the system to efficiently transfer packets in packet transport network (col.3 lns 50-51).

8. Claim 23 is rejected under 35 U.S.C. 103(a) over El-Malki and Rueda **to (US-PGPUB-20020112076)** and Chapman et al. to **(US6643292) and further in view of** Itoh to **(US20020194361)**

Regarding claim 23, El-Malki does not explicitly teach the data mover transport acknowledgement subfield comprising comprises the length of the entire subfield, the

subfield type code, the highest physical block number sent from this side of the connection the highest physical block number received on this side of the connection, the bit-significant flags representing the blocks received and the rate of data delivery to the destination packet driver

However, Rueda teaches the data mover transport acknowledgement subfield comprising comprises the length of the entire subfield, the subfield type code, the highest physical block number sent from this side of the connection(**[00140] discloses TCP/IP protocol stack it is well known as disclosed per RFC-793, fig.3 , TCP HEADER discloses sequence number),** the highest physical block number received on this side of the connection, the bit-significant flags representing the blocks received(**[00140] discloses TCP/IP protocol stack it is well known as disclosed per RFC-793, fig.3 , TCP HEADER discloses ACK flag),**

Therefore it would have been obvious to one ordinarily skilled in the art at the time the invention was made to enable the system of El-Malki include the data mover transport acknowledgement subfield comprising comprises the length of the entire subfield, the subfield type code, the highest physical block number sent from this side of the connection the highest physical block number received on this side of the connection, the bit-significant flags representing the blocks received and the rate of data delivery to the destination packet driver,as suggested by Rueda. This modification would benefit the system to be more efficient

However, Itoh teaches the rate of data delivery to the destination packet driver(**abstract, Itoh, discloses a transmission rate determining portion (104)**

determines the transmission rate of the data, and a data sending portion (100) sends the data at the determined transmission rate)

Therefore it would have been obvious to one ordinarily skilled in the art at the time the invention was made to enable the system of El-Malki include the rate of data delivery to the destination packet driver, as suggested by Itoh. This modification would benefit the system to be more efficient

7. Claims 38 and 39 are rejected under 35 U.S.C. 103(a) over El-Malki and Rueda to **(US-PGPUB-20020112076)** ,**and further in view of** Itoh to **(US20020194361)**

Regarding claim 38, El-Malki does not explicitly the step of using a source TPO and a destination TPO to create a pair of TPOs.

However, Rueda teaches the step of using a source TPO and a destination TPO to create a pair of TPOs(see fig.16 and 17)

Therefore it would have been obvious to one ordinarily skilled in the art at the time the invention was made to enable the system of El-Malki include the step of using a source TPO and a destination TPO to create a pair of TPOs as suggested by Rueda. This modification would benefit the system to be more efficient

Regarding claim 39, El-Malki does not explicitly teach a plurality of pairs of TPOs optionally for multicasting and for multipoint communication

However, Itoh teaches a plurality of pairs of TPOs optionally for multicasting and for multipoint communication **(abstract, Itoh, discloses a transmission rate**

determining portion (104) determines the transmission rate of the data, and a data sending portion (100) sends the data at the determined transmission rate)

Therefore it would have been obvious to one ordinarily skilled in the art at the time the invention was made to enable the system of El-Malki include a plurality of pairs of TPOs optionally for multicasting and for multipoint communication, as suggested by Itoh. This modification would benefit the system to be more efficient

Response to Arguments

Applicant's arguments have been considered but are not persuasive.

Applicant's arguments: Applicant argues that "E1-Malki fails to teach or suggest "using a source packet driver to **aggregate the intercepted IP packets** from the source application" as required by claim 1. Nowhere does E1-Malki teach or suggest such packet aggregation. Similarly, claim1 also requires "using a destination packet driver to disaggregate the transported aggregated packets". Logically, as E1-Malki does not teach or suggest packet aggregation, it similarly fails to teach or suggest packet disaggregation. Similar to claim 1, claim 42 also requires "using a packet driver to encapsulate the IP packet into a packet driver message, to **aggregate packet driver messages".** Likewise, claim 46 requires **"aggregating packet driver messages".** As such, E1-Malki fails to teach or suggest these features of claims 1, 42, and 46" Examiner respectfully disagrees **the home agent is able to serve as a proxy for mobile node 105. Accordingly, IP data packets from correspondent node 155 which are addressed to the mobile node 105 (i.e., the mobile terminal's home address) will be intercepted by the home agent 145.**

The home agent 145 then encapsulates the IP data packet so that the destination address reflects the mobile terminal's care-of-address, i.e., the address of foreign agent 120. The data packet is then sent from the home agent 145 to the foreign agent 120. When the IP data packet arrives at foreign agent 120, the IP data packet is retransformed or de-capsulated by stripping away the external IP header so that the mobile node's home address once again appears as the destination address.

Applicant is reminded that claims are given the broadest and reasonable interpretation. further, Applicant argues that "Rueda actually discloses nothing regarding selectively intercepting packets. In fact, if Rueda only selectively intercepted packets, then some of the packets would not be sent on to the correct client because of the confusion introduced by the ARP lookup. This would be counter to the purpose of Rueda, which is a system "that when installed, allows connected computers access Internet Protocol-based services if they are configured for any Internet Protocol-based network". See abstract. In this regard, Applicants again point out that "the proposed modification cannot render the prior art unsatisfactory for its intended purpose"" Examiner respectfully disagrees E1-Malki teaches "**Accordingly, IP data packets from correspondent node 155 which are addressed to the mobile node 105 (i.e., the mobile terminal's home address) will be intercepted by the home agent 145. Thus, packets are selectively intercepted"** in addition **,** Rueda teaches " **Intermediate Driver intercepts the packet from the transport driver it does a lookup in DestAddrPool using the destination IP address and destination TCP/UDP port number of the received packet." Applicant is reminded that** the operation of Rueda was not the one which was modified here to

render the claim obvious. And also, only the teaching of "lookup table " of Rueda is considered.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ZEWDU BEYEN whose telephone number is (571)270-7157. The examiner can normally be reached on Monday thru Friday, 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 1-571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Z. B./

Examiner, Art Unit 2461

/Huy D Vu/

Supervisory Patent Examiner, Art Unit 2461